

REPORT DOCUMENTATION PAGE

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14. ABSTRACT The Twenty-Third International Symposium on Shock Waves, hosted by the University of Texas at Arlington, was held in Fort Worth, Texas, from July 23 through July 27, 2001. The symposium covered a comprehensive range of topics involving shock waves, ranging from fundamental to applied. Plenary, oral and poster sessions were included. The symposium included a companion program and off-site events. A total of 210 delegates and 43 accompanying persons attended the symposium. The symposium proceedings will be made available later in 2002 as a CD-ROM with an ISBN.					
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AIR FORCE SUPPORT FOR THE TWENTY-THIRD INTERNATIONAL SYMPOSIUM ON SHOCK WAVES

FINAL TECHNICAL REPORT

Background

The *Twenty-Third International Symposium on Shock Waves* (ISSW23) continues a series of symposia dating back to 1957 in Boston. The symposium started as a forum for presenting research using shock tubes. Over the years, the symposium has grown in scope, both in technical content and in participation. It has settled into a biennial event rotating between the Americas, Asia/Australia and Europe. Moreover, its technical scope has broadened to include all aspects of shock wave and gaseous detonations, including numerical simulations. ISSW is held a week prior to the International Colloquium on Detonative and Reactive Systems (with the same geographical rotation) to facilitate participation of both meetings.

An aspect of the ISSW is that there is no umbrella organization to provide administrative and financial support, as compared with, say, the *Symposium on Combustion* organized by the Combustion Institute, Pittsburgh. For the ISSW, a Local Organizing Committee handles these matters. An International Advisory Committee (IAC) provides overall guidance and a Scientific Review Committee (SRC) is established to review abstracts. The IAC and SRC are established anew by each Local Organizing Committee. Other than the conference proceedings, the contributors are encouraged to publish their results in *Shock Waves*.

ISSW23

The University of Texas at Arlington is host to ISSW23 after submitting consecutive bids at ISSW21 and ISSW22 in Great Keppel, Australia, and London in 1997 and 1999. ISSW23 was held in the Worthington Renaissance Hotel, Fort Worth, Texas, from July 22 through 27, 2001. The technical program consists of plenary lectures from internationally renowned authorities, and oral or poster contributions. The plenary papers are as follows:

1. "Hypersonic aerothermodynamic and scramjet research using high enthalpy shock tunnel," the Paul Vieille Lecture by Katsuhiro Itoh (National Aerospace Laboratory, Japan)
2. "High speed test flows: combining CFD with experiment," the Ernst Mach Lecture by Richard Hillier (Imperial College, UK)
3. "Studies of non-classical shock wave phenomena," by Jason Bates (Naval Research Laboratory)
4. "Cavities, their collapse and the damage that ensues," by Neil Bourne (Royal Military College of Science, UK)
5. "Pulse detonation device: advantage, difficulties and scientific problems," by Victor Golub (Institute for High Energy Densities, Russian Academy of Sciences)
6. "Propulsion applications of shock-induced combustion," by K. Kailasanath (Naval Research Laboratory)
7. "A shock tube based system for the delivery of powdered drugs: from concept to technology platform," by Mark Kendall (PowderJect Centre for Gene and Drug Delivery Research, University of Oxford, UK)
8. "Adaptive grids for resolution enhancement," by Gordon Liao (University of Texas at Arlington)
9. "Shock waves in aviation security," by Gary Settles (Penn State University)
10. "Towards the miniaturization of explosive technology," by D. Scott Stewart (University of Illinois - Urbana-Champaign)

A total of 16 oral sessions and two poster sessions were held. There were 210 registered attendees from 21 countries.

A Scientific Review Committee was established to review the abstracts. The abstracts were sent for three reviews. In addition to the 10 plenary lectures, 166 oral papers and 55 posters were presented. Forty-five abstracts/papers were rejected or withdrawn. The symposium proceedings will be made available in a CD-ROM toward the middle of 2002. The next symposium will be held in Beijing in July 2003.

Air Force Participation

Dr. John Schmisser (AFRL and presently at AFOSR) participated as a member of the Scientific Review Committee. He presented a paper entitled "Numerical simulation of Mach reflections in steady flow," co-authored with Dr. Datta Gaitonde. Four copies of the Book of Abstracts have been forwarded to Dr. Schmisser.

Expenditure of AFOSR Funds

AFOSR support is acknowledged in the symposium website, the Book of Abstracts and every morning at the beginning of the daily sessions. The support will also be acknowledged in the proceedings. AFOSR support was used provide registration fee waivers and subsidies, and to defray the cost of travel by international participants. The expenditure breakdown is shown in Table 1.

Table 1. Expenditure of AFOSR funds

Registration fee waiver/subsidy	\$	5,350
Travel by Professor Neil Bourne	\$	1,650
Total	\$	7,000

Registration fee waivers and subsidies were given to twelve Russian and one Indian participant. In addition, Professor Bourne could only consent to delivering his plenary lecture if his travel expenses were paid. Professor Bourne's total travel cost amounts to \$2,398.65. As Professor Bourne is internationally renowned in cavitation and explosives initiation, his presence in the symposium was thought to be worth the cost. His plenary lecture contributed greatly to the topical coverage of the symposium.